

10/510581

PATENT CLAIMS

DT04 Rec'd PCT/PTO 08 OCT 2004

1. A turbocharger (1), comprising a turbine (2) with a turbine wheel (4) and a compressor (3) with a compressor wheel (7), the turbine wheel and the compressor wheel being connected via a shaft (10), the shaft being rotatably and axially mounted by means of bearings arranged between turbine wheel and compressor wheel, and the turbine wheel, the shaft and the compressor wheel being arranged in a housing (5, 9, 16) and connected to one another in such a way that, in the event of the compressor wheel (7) bursting, an axial force acting in the direction of the turbine (2) acts on the turbine wheel (4) and the shaft (10) connected to it, characterized in that a means (22, 25) for axially locking the shaft (10) and the turbine wheel (4) connected to it is arranged between the compressor wheel and the turbine wheel on the shaft (10) connected to the turbine wheel (4), the means (22, 25), in the event of the compressor wheel (7) bursting, preventing an axial movement of the shaft (10) and of the turbine wheel (4) connected to it in the direction of the turbine (2).
2. The turbocharger as claimed in claim 1, characterized in that the means (22, 25) for axially locking the shaft (10) interacts with bearing elements (18, 18a and 19) of the shaft (10).
3. The turbocharger as claimed in claim 1 or 2, characterized in that the means (22, 25) for axially locking the shaft (10) is essentially radially symmetrical.
4. The turbocharger as claimed in claim 1, 2 or 3, characterized in that the means (22, 25) for axially locking the shaft (10) is a locking ring (22) arranged on the shaft (10).

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5. The turbocharger as claimed in claim 4, characterized in that an encircling annular groove (23) for accommodating the locking ring (22) is arranged in the shaft (10), the inserted locking ring (22) projecting radially outward beyond this annular groove (23), the axial flanks of the annular groove (23) preferably

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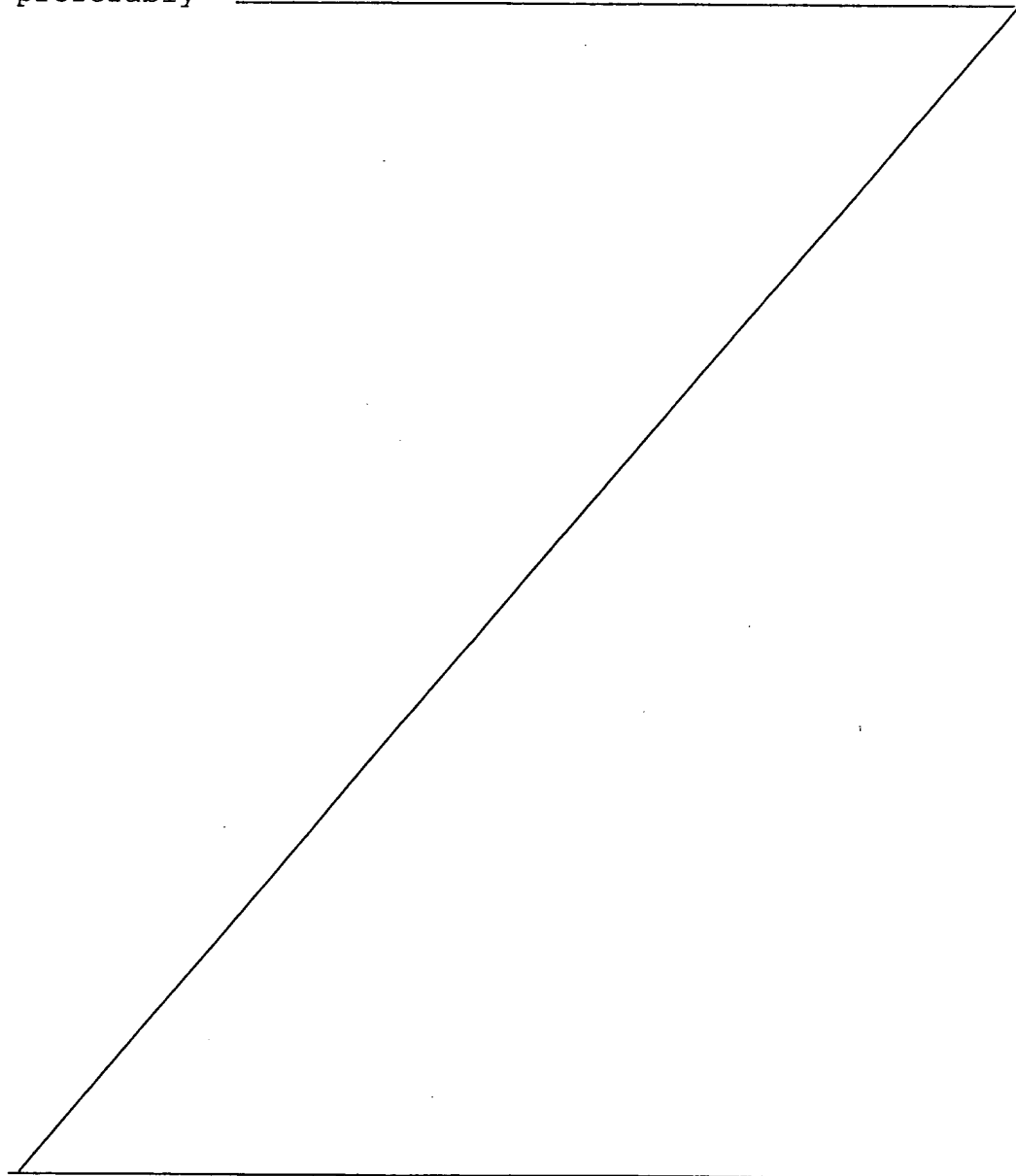
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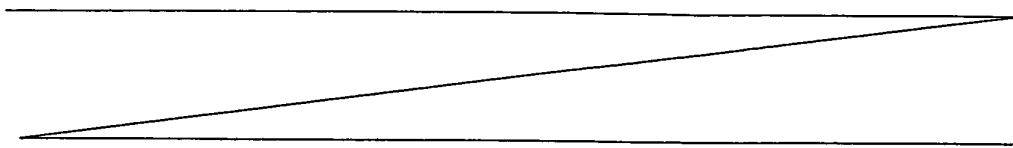
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- 5 11. The turbocharger as claimed in claim 1, 2 or 3, characterized in that the means (22, 25) for axially locking the shaft (10) is a retaining sleeve (25) fastened to the shaft (10).
- 10 12. A means for axially locking a shaft (10) and the components of a turbocharger which are firmly connected to this shaft, a turbine wheel (4) and a compressor wheel (7) being arranged in a rotationally fixed manner on the shaft, the shaft being rotatably and axially
- 15 mounted by means of bearings arranged between turbine wheel and compressor wheel, and the turbine wheel, the shaft and the compressor wheel being arranged and connected to one another in such a way that, in the event of the compressor wheel bursting, an axially
- 20 acting force acts on the shaft and on the components firmly connected to it, characterized in that said means (22, 25) is connected to the shaft (10) in such a way that it interacts with bearing elements (18, 18a and 19) of the shaft (10) in the event of the
- 25 compressor wheel bursting, so that the axially acting force is compensated for by this interaction and an axial movement of the shaft (10) and of the components (4) firmly connected to it is prevented.